



LOCAL ROADMAP

Roadmap for the FUA Salzburg focusing on green space assessment and improvement with GIS and community involvement techniques

D.T3.3.2 - Local Roadmap for implementing smart and integrated UGS governance

Authors: RSA iSPACE Team

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1. INTRODUCTION

This document has been developed within the scope of the project Urban Green Belts (UGB), which is funded by Interreg Central Europe. The project aims at the development of smart methods and tools for the assessment of urban and suburban green in functional urban areas (FUAs), which generally include a city and its commuting zone. It focuses on the three thematic pillars GIS-methods, community involvement, and multi-stakeholder governance, for which methods and tools have been elaborated and tested during pilot activities.

This roadmap introduces application-oriented GIS methods that help to evaluate the quality and potential of green spaces. It explains how to reproduce and adapt these methods to fit the exact needs of the public authorities of the federal state Salzburg. For this purpose, indicator sets and integrated values that help to determine the quality of green in terms of their recreational and landscape value are presented. Furthermore, the roadmap aims at the preservation of already existing high quality green and the upgrading of the quality of green spaces achieving low and medium results, an improvement of green space supply, and a decrease of zones of conflict between different green space functions. To involve the residents and raise awareness on the benefits of green, results will be presented to the public with the help of online presentations, exhibitions, or at green events organized in the municipalities.

The study area is a part of the Salzburg FUA and includes eleven municipalities that cover the region from the city of Salzburg to Golling. This area is characterized by a high share of green spaces, but also by a strong settlement pressure, which increases the need for an assessment and monitoring system for green space quality and supply.

Figure 1 shows an overview of the goals, methods, and advantages of the approach described in the roadmap.

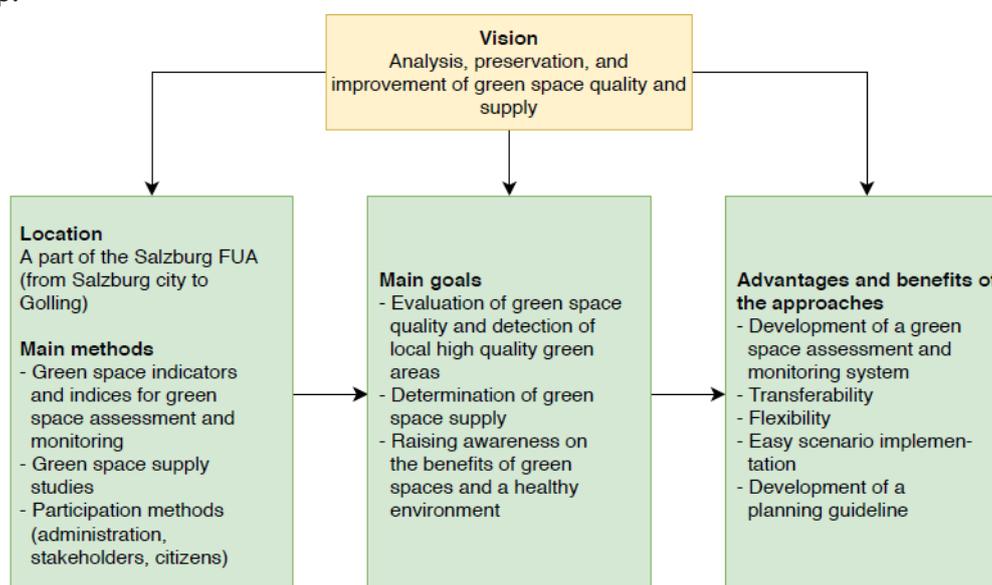


Figure 1: Overview of the roadmap (own representation)

The approach considers ecosystem services (ESS) as the most important foundation for the importance of green areas. ESS in general can be described as functions that ecosystems provide for humans. They can be divided into four different categories: provisioning (e.g. food, fiber, fresh water), regulating (e.g. air quality and climate regulation, pollination), cultural (e.g. education, aesthetic values, recreation), and supporting (e.g. soil formation, primary production, nutrient cycling) (MA 2005). The approaches described in the roadmap strongly focus on recreation and natural attractiveness as examples of cultural ESS.

2. BASELINE SITUATION

2.1 Study area characteristics

The study area covers a part of the FUA Salzburg, which comprises the city of Salzburg as core and ten smaller municipalities located in its commuting zone in the Flachgau and Tennengau regions. It has a total size of 351.57km² and a population of 217,601 (01.01.2018). The region is characterized by the river Salzach, the surrounding alpine mountains, and a high share of diverse green space types. The city of Salzburg with over 150.000 inhabitants is the only larger urban agglomeration. Figure 2 shows an overview of the study area along with the locations of settlement cores and areas of permanent settlement.

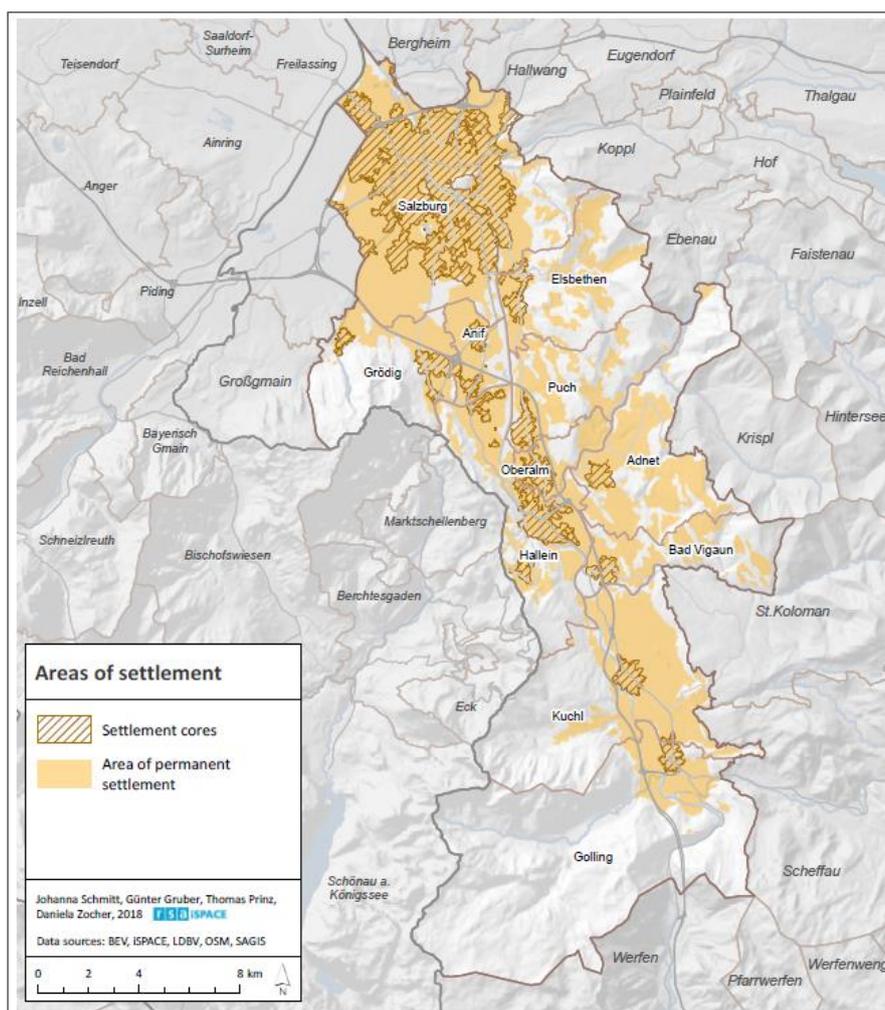


Figure 2: Settlement cores and areas of permanent settlement in the study area

Many municipalities in the study area are exposed to settlement pressure caused by a high population growth exceeding the growth rates of the federal state and the whole country (STATISTIK AUSTRIA 2018). It is important to note that all methods presented in this roadmap also can be applied to the whole federal state or even a wider region.

2.2 Status quo of green

Altogether, 76.75% of the study area are covered with green. According to the digital cadastral map provided by the BEV the dominant public green land types according are forests (covering 38.02% of the total study area), agricultural areas (24.09%), and alpine pastures (6.23%). Recreational areas have a share of 1.15%, but in the class defined by the BEV, they do not only include green spaces, but also some sealed surfaces (e.g. fortified sports fields) or areas with restricted access (e.g. allotment gardens). Private gardens reach a share of 5.82%. Most of them are of small size, but the absolute number of gardens with over 33,000 is very high and makes them the most common green space category and the second most common land use type after buildings. Agricultural areas have a total number of approx. 14,000 parcels and form the second most common green space type in absolute numbers. They are followed by forests with 9,400 individual parcels. Recreational areas have a number of 596. Other green space types that can be found in the study area include shrubs, road- and waterside green, horticultural areas, cemeteries, wetlands, and vineyards. However, most of them have low shares.

Non-green areas including land cover classes that include areas for traffic, railways, parking, buildings and ancillary spaces, debris, and surface water bodies reach a total share of 23.25%. The share of sealed surfaces is 10.39%, which was calculated by using the area of buildings and ancillary spaces, operating areas, traffic areas, parking lots, and railways.

2.3 Green space management and planning documents

The actions defined in the roadmap are based on several planning documents developed by the federal state authorities, of which the most important one is the regional development program. It contains guidelines for spatial development and refers to development axes, planning regions, settlements, economy, and infrastructure. In addition, a particular section is dedicated to green space planning, nature conservation, and landscape development, which focuses on the protection of ecological stability, landscape qualities, the role of nature as resource carrier and producer, and the recreational value by defining three main goals:

1. Monitoring of green space quality
2. Protection of efficient and enclosed agricultural areas
3. Conservation of areas with high ecological and/or aesthetic value and development of livable spaces with high biodiversity

For the achievement of these goals, different measures are identified:

1. Determination of settlement boundaries with local and supra-local importance
2. Protection of important coherent local and supra-local green belts, corridors, and links
3. Protection of large unsealed green spaces in the city and surrounding municipalities
4. Definition of settlement edges by considering scenic integration
5. Improvement and protection of green spaces in residential environment aiming at the advancement of the quality of living
6. Definition of priority areas for agriculture, biotope protection, recreation, water economics, and immission control
7. Consideration of quality criteria (e.g. accessibility) for the determination of recreational areas
8. Identification of alpine areas to be kept from touristic development

(AMT DER SALZBURGER LANDESREGIERUNG 2003)

The second considered document is the forest development plan, which consists of a cartographic representation of all forest areas and information about their main functions that are divided into four different categories:

1. Productive function: forest for timber production and economic use
2. Protective function: forest providing protection against natural phenomena and hazards like erosion, rock fall, flooding, and avalanches
3. Welfare function: positive effects of the forest including climate and water balance, air and water purification, and noise reduction
4. Recreational function: forest areas serving the increasing demand for recreational areas, especially in densely populated regions

(LAND SALZBURG 2018a)

Nature conservation is also within the responsibility of the federal state. It is based on the nature conservation act from 1999, which is a legal foundation aiming at the protection and maintenance of the environment. It defines measures that among others include the collection of nature protection foundations, the development of concepts for management and landscape conservation, restoration projects, and awareness raising (LAND SALZBURG 2018b).

Some planning documents referring to green also exist at municipality level since every municipality has an own spatial developing concept. In the case of the city of Salzburg, this concept contains a comprehensive section about green and open spaces. It identifies development potentials for different green areas and urban landscapes and districts with good and poor green space supply. Furthermore, a green network fulfilling recreational, scenic, and ecological functions is aspired (MAGISTRAT DER STADT SALZBURG 2009).

Another example at municipality level is the zoning plan, which is elaborated by community representatives. The plan is based on a cadaster and specifies the designated use for every lot within the municipality by distinguishing e.g. between building area, traffic area, or green space. It consists of a textual and a cartographic component (LAND SALZBURG 2018c).

2.4 Challenges

Although the study area contains a high share of green and diverse green space types, no common green space monitoring or management system is present. Therefore, the approach described in this document helps to bridge this gap by providing transferrable and flexible GIS-based tools for the assessment of the quality of urban, suburban, and rural green. The method is flexible and adaptable, which means that different scenarios easily can be taken into account.

Due to the aforementioned population growth and a resulting settlement pressure, it is also important to define valuable green spaces that need to be maintained and preserved for the future. Within this scope, it is necessary to define priority zones for different green space functions, e.g. recreation, ecology, and agriculture, but also zones of conflict.

3. VISION AND OBJECTIVES

Most objectives developed within the scope of this roadmap and the described indicator sets are based on content and goals determined in the planning documents that are listed in Chapter 2.3. Especially the regional development program plays a significant role since it is the most important planning document from the government of the federal state.

For the FUA Salzburg, a comprehensive green space assessment system is suggested, which has been developed within the scope of UGB. This system aims at the determination of green space quality in terms of recreation and natural attractiveness, green space supply (especially in walking distance), and priority and conflict zones of different green space uses like recreation and agriculture but also between the preservation of valuable green and settlement development.

The objectives defined within this roadmap focus on the assessment and monitoring of green space quality, the improvement of green space supply (especially in municipalities with a lack of green with a good recreational value), and the decrease of zones of conflict resulting from different green space functions within an area. These objectives mainly describe the analyses performed during the pilot activities of UGB along with explanations on how to reproduce and adapt them. An additional objective builds on activities of the other working groups of UGB and aims at awareness raising and dissemination strategies.

The defined objectives and their inherent actions include:

- **Objective 1: Monitoring of green space quality**
 - *Action 1.1:* Assessment of green space quality in terms of recreational value
 - *Action 1.2:* Assessment of green space quality in terms of landscape value
 - *Action 1.3:* Green space surveys

- **Objective 2: Improvement of green space supply**
 - *Action 2.1:* Determination of green space supply in short walking distance
 - *Action 2.2:* Remodeling of green spaces to raise the supply with high quality green

- **Objective 3: Well-balanced distribution of green for an integrative regional development**
 - *Action 3.1:* Identification of development and conflict zones
 - *Action 3.2:* Prioritization of areas and conflict handling

- **Objective 4: Awareness raising**
 - *Action 4.1:* Organization of green events with result communication

4. ACTIONS

Objective 1: Monitoring of green space quality

Action 1.1: Assessment of green space quality in terms of recreational value

Objective Title: Monitoring of green space quality	Objective Number: 1
Action Title: Assessment of green space quality in terms of recreational value	Action Number: 1.1
Action description	
<p>This action needs to be performed to identify valuable green spaces based on their recreational value and, in general, the status quo of green space quality. The main foundation is the analysis of the infrastructural equipment suitable for intensive recreational use. For this purpose, three indicators have been defined, which can be calculated with the help of ArcGIS:</p> <ul style="list-style-type: none"> • Presence of a sports field, a playground, or a picnic site • Path density • Number of different categories of infrastructural elements (e.g. playgrounds, benches) <p>In order to derive an integrated recreational value, an average of the indicators needs to be calculated, which can be represented in a map.</p>	
Adaptation potential	
<p>The indicator set can be enhanced depending on the analytical goal. Other thinkable indicators are e.g. area size, soundscape, safety (e.g. lighting or the openness of footpaths), or natural characteristics like the presence of surface water that are beneficial for active recreational use.</p>	
Estimated Efforts	
<p>The action is designed as a guideline for planners from authorities that need to assess and monitor the current status of green spaces. A GIS expert can perform it easily. For the implementation, approximately half a person-month has to be scheduled (depending on the number of calculated indicators, indices, and resulting maps). An iteration is recommended to update the results after some measures to increase the quality of green spaces with low or medium values have been taken.</p>	
Measuring success	
<p>The aim is to derive results that represent a realistic picture of reality. Since the city of Salzburg contains by far the greatest number of zoned recreational areas, the results need to highlight this circumstance. Furthermore, a normal distribution of the number of green spaces per quality level should be achieved. A reusable GIS model helps to measure the success of the upgrading actions.</p>	
Local vision and beyond	
<p>The action is part of an assessment system that helps to evaluate the quality of different types of green. It is a foundation for the performance of many further actions and the implementation of other objectives like the subsequent supply study or actions regarding the improvement of green space quality. The indicator set is easily transferable to other regions since it is considered as a flexible foundation for different kinds of analytical goals.</p>	

Action 1.2: Assessment of green space quality in terms of landscape value

Objective Title: Monitoring of green space quality	Objective Number: 1
Action Title: Assessment of green space quality in terms of landscape value	Action Number: 1.2
Action description	
<p>Like Action 1.1, this analysis is required to gain information about the status quo of green spaces. It aims at the determination of a landscape value, which is based on indicators referring to natural attractiveness and ecology. For the determination of this value, nine indicators are recommended:</p> <ul style="list-style-type: none"> • Relief diversity • Presence of a water body in or near the green space • Tree cover density • Quality of ecosystem services provided by land cover classes • Share of biotope areas • Share of protected areas • Share of noise zones • Share of habitat corridors • Share of forest with recreational or welfare function <p>The calculation of the landscape value is suggested because many green spaces without a good recreational infrastructure still have a nature-based recreational potential based on their natural attractiveness. Besides, it also can be used to gain information about the ecological status and the habitat function of an area. Again, the calculation of the average of the indicator calculation results is required to derive an integrated result.</p>	
Adaptation potential	
<p>A possible adaptation of this approach is to put a focus on the ecology and habitat function instead of natural attractiveness. This can be achieved by adding additional indicators, e.g. soil quality or the number of existing plant and animal species within an area. If only the natural beauty for human green space visitors is analyzed, indicators referring to habitats and biotopes are of lower importance and presence of water or noise zones gain more value.</p>	
Estimated efforts	
<p>Like Action 1.1, this action serves as a guideline for planners from public authorities and requires a GIS expert and a GIS software. For the implementation, approximately one person-month will be necessary, depending on the scope of the analysis. An iteration to update the results will be required after some improvement measures have been taken to raise green space quality.</p>	
Measuring success	
<p>The action can be considered as successful if a normal distribution of the number of green spaces per quality level will be achieved during the assessment process. Furthermore, the results have to highlight the presence of large high quality areas in the smaller municipalities.</p>	
Local vision and beyond	
<p>The indicator set can be adapted based on requirements and analytical goals and transferred to different study areas. It can help to detect interconnected green corridors consisting of green areas with similar characteristics and values that need to be preserved for recreational and/or nature conservation purposes. Furthermore, the outputs of this action are also required for green space supply studies.</p>	

Action 1.3: Green space surveys

Objective Title: Monitoring of green space quality	Objective Number: 1
Action Title: Green space surveys	Action Number: 1.3
Action description	
<p>With the help of a survey that consists of a questionnaire with open and closed questions, the behavior of green space visitors can be investigated. The survey results can also help to identify additional indicators for green space assessment.</p> <p>Possible questions to be investigated with the help of the survey include:</p> <ul style="list-style-type: none"> • What green spaces do visitors consider especially attractive/unattractive and why? • How often and how long do people visit green spaces? • What kind of green spaces are most often frequented (e.g. parks, forests)? • What are the reasons to visit green spaces? • Which infrastructural equipment or natural characteristics are considered important? • What measures do visitors suggest for the improvement of unpopular green spaces? <p>The survey could be conducted online, but since it requires a cross section of the whole population and not every demographic group can easily be reached online, it is suggested to perform the survey offline for some example municipalities in the study area. As examples, municipalities with different size and different characteristics regarding their green space inventory are suitable.</p>	
Adaptation potential	
<p>The survey can have different purposes. To be suitable for indicator definition, the survey has to include questions that help to identify green space features that visitors consider especially important. Furthermore, the question of green spaces that are considered as very attractive can be valuable to supplement the supply study.</p>	
Estimated efforts	
<p>The main goals and contents of the survey have to be defined by the administration officials. However, a research institute or faculty can carry out the development of detailed questions and the interviews. For the design of a questionnaire, interviewing participants, and analysis & interpretation of the results, we estimate an effort of approximately 1 person-month.</p>	
Measuring success	
<p>The success of the action can be measured with the number of participants and the general representativeness of the survey. To reach a best possible cross-section of the population, participants from all age groups and a balanced number of male and female persons are required. Since the municipalities in the study area are different regarding their green space inventory, the survey also has to be conducted for municipalities representing these contrasts.</p>	
Local vision and beyond	
<p>This action serves the purposes supplement of the GIS analysis and investigation of wishes and demands of green space visitors. Therefore, the action is capable of deepening the assessment of green space quality with the help of qualitative data. Depending on how strong the questions are tailored to the characteristics of the study area, the results can be transferred to a wider region.</p>	

Objective 2: Improvement of green space supply

Action 2.1: Determination of green space supply in short walking distance

Objective Title: Improvement of green space supply	Objective Number: 2
Action Title: Determination of green space supply in short walking distance	Action Number: 2.1
Action description	
<p>The goal of this action is the determination of the green space supply for residents living in the study area. The identification of the status quo of green space availability is the foundation for the remodeling of green spaces to raise their quality and, consequently, the share of residents with access to high quality green. In this analysis, an acceptable distance of max. 400m has been used during the UGB pilot, which represents the near walking distance for all demographic age groups including infants and older people. For this distance, service areas for each green space have been calculated. This method provides information about the share of residents living in the service area of green spaces of different quality levels.</p>	
Adaptation potential	
<p>An additional green space supply in a far walking distance for more mobile persons (e.g. 1000m) or in biking distance (e.g. 3,500m) or using different acceptable distances for green spaces with high <i>recreational</i> and green spaces with high <i>landscape</i> value can be considered. It is also possible to define service areas in dependency of the attractiveness of a green space since green areas with high quality are more likely to be visited by people living in further distance than green areas with low quality. This also includes the distinction between green spaces that are used in everyday life and green spaces that are used for larger trips on weekends.</p>	
Estimated efforts	
<p>The action serves as a guideline for planners and administration officials. It requires a GIS expert. For the implementation, approximately 0.5 person months will be necessary. After some improvement activities have been taken, it requires an iteration to examine their success.</p>	
Measuring success	
<p>The presence of green spaces in near walking range is important since most people are not willing to travel large distances to a park or a similar area that is frequently used for everyday recreation. Therefore, the analysis has to consider a maximum distance threshold that is suitable for all demographic age groups. The results need to reflect the location of green spaces with high and low value determined in objective 1.</p>	
Local vision and beyond	
<p>This action is important to identify the share of population that profits from the presence of high quality green. In addition, it provides a foundation for improvement measures since it highlights undersupplied regions. It is easily transferrable to other regions without any adaptations provided that sufficient data sets are available for the calculation process.</p>	

Action 2.2: Remodeling of green spaces to raise the supply with high quality green

Objective Title: Improvement of green space supply	Objective Number: 2
Action Title: Remodeling of green spaces to raise the supply with high quality green	Action Number: 2.2
Action description	
<p>For green spaces that according to the results from the GIS analyses and the survey are considered as improvable, some measures to raise their attractiveness will be taken. Ideally, these measures are based on suggestions for improvement made by survey participants. These could be e.g.:</p> <ul style="list-style-type: none"> • Improvement of playgrounds and sports fields • Additional benches, paths, or other infrastructural features • Additional trees or hedges • Decorative elements • Improve access to green spaces by creating foot and cycle paths <p>After the conduction, a survey regarding the satisfaction of green space visitors is recommended. Alternatively, constant collecting of feedback during meetings like workshops or info events can be used as method to collect responses. However, the latter requires an interested community that is willing to actively contribute to this action. This community can be created by using different methods, e.g. a classroom in the park during a green event.</p>	
Adaptation potential	
There are no theoretical limits for the number and types of improvement features.	
Estimated efforts	
<p>The action needs to be commissioned by the administrations of the municipalities. The costs strongly depend on the taken measures and the number of green spaces that will be improved. It is recommended to perform upgrading measures for one example green space and receive feedback from local residents and green space visitors before designing concepts for the remodeling of other areas. This helps to select specific measures that are appreciated by the users.</p>	
Measuring success	
<p>At least one example green space should be improved within the scope of this action in order to test different measures and collect feedback from local residents. The action will be considered as successful if the number of high quality green spaces located in or near settlement cores and thus the share of well-supplied residents increases. An aspired growth rate of high quality green spaces can be e.g. 5-10% or improvement concepts for 8-10 important green spaces. Additionally, success can also be measured by feedback from green space visitors.</p>	
Local vision and beyond	
<p>The action helps to raise the quality of green spaces and the share of residents with access to high quality green. Approved methods can be transferred to other regions with a similar green space inventory and similar lacks and needs.</p>	

Objective 3: Well-balanced distribution of green for an integrative regional development

Action 3.1: Identification of development and conflict zones

Objective Title: Well-balanced distribution of green for an integrative regional development	Objective Number: 3
Action Title: Identification of development and conflict zones	Action Number: 3.1
Action description	
<p>The action starts with the identification of possible priority areas for different types of green space usage with the help of GIS, e.g. recreation, habitat, or agriculture. Actions 1.1 and 1.2 can be used for the assignment. This means that green spaces achieving high values regarding the defined functions have to be extracted and strong interconnections (e.g. green belts as climate regulators or habitats) need to be identified. Then a particular importance of certain spaces (e.g. singularity in community, gap-closing function) can be assigned with a focus on sufficient supply (cf. Objective 2) to highlight an outstanding value and thus need for preservation or even new/further development. For an integrative view on regional development, supplementary data like population forecasts, zoning plans, or densification potential have to be integrated. This may result in zones of conflict. With the help of smart methods, conflicts between the monitoring of green space quality and the expansion of the boundaries of densely settled areas resulting from strong population pressure can be detected.</p>	
Adaptation potential	
<p>Other land use classes and housing/settlement data can be added in order to identify potentials and barriers of green space development. A further addition is the consideration of the impact of expanding boundaries of settlement cores caused by demographic pressure. This can be conducted by population forecasts for municipalities or by assuming that settlement cores will grow evenly.</p>	
Estimated efforts	
<p>The responsibility for this action lies with the federal state government to provide a sufficient supply of high quality green for the future against the background of an increasing population. The implementation requires a GIS expert and approx. 1 person-month.</p>	
Measuring success	
<p>The action is successful if the user delineates and maps some zones of crucial green functions. These can be recreational grounds of outstanding importance for the residents, nature preservation zones or interconnected green belts to secure habitat or ecological functions on a long term.</p>	
City/region vision and beyond	
<p>The action helps to identify regions with needs regarding the development of green spaces and zones of conflict resulting from overlapping contradictory land use classes. The GIS methods can be transferred to other regions if appropriate data are available. However, it might be necessary to use different types of dominant land use depending on the characteristics of the study area.</p>	

Action 3.2: Prioritization of areas and conflict handling

Objective Title: Well-balanced distribution of green for an integrative regional development	Objective Number: 3
Action Title: Prioritization of areas and conflict handling	Action Number: 3.2
Action description	
<p>This action is required to find solutions for problems caused in regions where two or more contradictory green space functions or land use plans overlap (e.g. recreation vs. agriculture or housing vs. habitat). Consequently, some kind of prioritization approach is needed. A straightforward solution would be the implementation of different scenarios, e.g. the general preference of recreational areas over economy or vice versa, or the introduction of weight factors. However, in reality we have to consider two aspects: the particular meaning of a single (green) area in its local context and the opinion of stakeholders. The first issue can be addressed via flexible and integrative assessment studies as prepared in Action 3.1. For the future, it is important to give priority to valuable green spaces that need to remain available for an increasing population. Regarding the second issue, we recommend smart methods of stakeholder involvement including representatives of all target groups (mayors, planners, citizens etc.) by round tables and early and ongoing inclusion to the conceptualization process organized and moderated by the regional planning department.</p>	
Adaptation potential	
<p>The action allows the development and comparison of different scenarios in which also the will of local stakeholders and goals defined in development concepts can be taken into account. An interactive Web-GIS application makes it easy to compare the results of different scenarios in a dynamic way and discuss possible solutions.</p>	
Estimated efforts	
<p>This action is directly based on Action 3.1, which aims at the identification of development and conflict zones. It is rather complex as it requires the results from the GIS analysis, the involvement of different stakeholders and departments, and a general agreement on the types of the most urgent types of conflict that have to be resolved. A cooperation and a dialogue between all relevant stakeholders need to be established.</p>	
Measuring success	
<p>The action can be seen as successful if the number of conflicts for at least two important types of conflicting land use classes (e.g. agriculture/recreation) or between settlement growth and green spaces can be reduced by defining the priority land use type for a particular area. To reach this goal, frequent cooperation, and discussion between public administrations, planning departments and other stakeholders is required. In addition, the results of other GIS analyses like the supply study are important for a successful implementation of the action.</p>	
City/region vision and beyond	
<p>The reduction of conflicts is important for the further development of planning documents and the design of new strategies. Although in every region different types of conflicts occur, some aspects of the action can be transferred. They include e.g. flexible scenario development or methods of stakeholder involvement.</p>	

Objective 4: Awareness raising

Action 4.1: Organization of green events with result communication

Objective Title: Awareness raising	Objective Number: 4
Action Title: Organization of green events with result communication	Action Number: 4.1
Action description	
<p>Green events are a good opportunity to present the achievement of green space management to interested citizens with the help of an exhibition, posters, or booklets. These should contain some simplified and easy to understand maps with some textual descriptions regarding analytical goals, interpretation of the results, and measures for the future. One suggestion is to organize a large event with a diverse program that may include games, sport activities, music, exhibitions, and guided walks. Alternatively, smaller events like sport fests, picnics, or bicycle tours can be organized. In both cases, a green event is an opportunity to present results from GIS analyses and other actions, conduct a survey regarding green space perception, or apply community-building actions such as a classroom or a parliament in the park.</p>	
Adaptation potential	
<p>The presented tools, booklets, etc. can be provided online as well to reach an even wider audience. Interactive websites and webmaps can support the awareness raising process. This action is also valuable for the collection of feedback that can be used for satisfaction studies.</p>	
Estimated efforts	
<p>This activity can be performed by the government of the city of Salzburg or any other municipality in cooperation with different associations and external persons. These could be organizations that promote green spaces and the environment (e.g. nature conservation associations) or childcare facilities/youth workers. For this action, advertising in the form of posters or flyers is required to arouse interest among citizens. Depending on the designed program, also some persons responsible for the supervision of stands, games, etc. are necessary.</p>	
Measuring success	
<p>The success can be measured by the number of green event visitors in relation to the number of residents living in the municipality in which the event is organized. It is important to provide a program that attracts all age groups to make the event interesting for the greatest possible number of persons. For the city of Salzburg, a number of 250 visitors could be the aspired goal.</p>	
Local vision and beyond	
<p>This action helps to raise awareness and to involve interested residents in green space planning and management activities. It is transferable to all other cities and regions.</p>	

5. SUMMARY

Vision: Analysis, preservation, and improvement of green space quality and supply				
Objective	Action title	Responsible	Budget	Timeline
Objective 1 Monitoring of green space quality	Action 1.1 Assessment of green space quality in terms of recreational value	Federal state government		
	Action 1.2 Assessment of green space quality in terms of landscape value	Federal state government		
	Action 1.3 Green space surveys	Research Institutes		
Objective 2 Improvement of green space quality	Action 2.1 Determination of green space supply in short walking distance	Federal state government		
	Action 2.2 Remodeling of green spaces to raise the high quality green supply	Municipalities in cooperation with planning bureaus		
Objective 3 Well-balanced distribution of green for an integrative regional development	Action 3.1 Identification of development and conflict zones	Research Institutes in cooperation with authorities		
	Action 3.2 Prioritization of areas and conflict handling	Research Institutes in cooperation with authorities		
Objective 4 Awareness raising	Action 4.1 Organization of green events with result communication	Municipalities in cooperation with civic associations		

REFERENCES

- AMT DER SALZBURGER LANDESREGIERUNG (2003): Salzburger Landesentwicklungsprogramm. Gesamtüberarbeitung 2003. Salzburg: n.p.
- BURKHARD, B., F. KROLL, F. MÜLLER & W. WINDHORST (2009): Landscapes' capacities to provide ecosystem services. A concept for land cover based assessments. In: Landscape Online 15, 1-22.
- CHHETRI, P. & C. ARROWSMITH (2008): GIS-based modeling of recreational potential of nature-based tourist destinations. In: Tourism Geographies 10, 2, 233-257.
- LAND SALZBURG (ed.) (2018a): Waldentwicklungsplan (WEP). <https://www.salzburg.gv.at/agrarwald_/Seiten/wep.aspx> (accessed: 2018-12-10).
- LAND SALZBURG (ed.) (2018b): Naturschutzrecht Salzburg. <<https://www.salzburg.gv.at/themen/natur/naturschutzrecht-2>> (accessed: 2018-12-18).
- LAND SALZBURG (ed.) (2018c): Flächenwidmungsplan. <<https://www.salzburg.gv.at/themen/bauen-wohnen/raumplanung/oertliche-raumplanung/flaechenwidmungsplan>> (accessed: 2018-12-18).
- MA (MILLENNIUM ECOSYSTEM ASSESSMENT) (2005): Ecosystems and human well-being. Synthesis. Washington: Island Press.
- MAGISTRAT DER STADT SALZBURG (2009): Die zukünftige Entwicklung der Stadt Salzburg. Räumliches Entwicklungskonzept der Stadt Salzburg. REK 2007. Salzburg: n.p.
- STATISTIK AUSTRIA (2018): Bevölkerung zu Jahres- und Quartalsanfang. <https://www.statistik.at/web_de/statistiken/menschen_und_gesellschaft/bevoelkerung/bevoelkerungsstand_und_veraenderung/bevoelkerung_zu_jahres-_quartalsanfang/index.html> (accessed: 2018-12-10).